

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference ACD 3014 WO	<b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416	
International application No. PCT/EP2004/007841	International filing date (day/month/year) 13.07.2004	Priority date (day/month/year) 21.07.2003
International Patent Classification (IPC) or national classification and IPC C07C229/26, B01D61/44		
Applicant AKZO NOBEL N.V. et al.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <ul style="list-style-type: none"> <li>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of sheets, as follows:           <ul style="list-style-type: none"> <li><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</li> <li><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</li> </ul> </li> <li>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)), containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</li> </ul>		
<p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the opinion</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul>		
Date of submission of the demand 23.12.2004	Date of completion of this report 14.07.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Österle, C Telephone No. +49 89 2399-8120	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/EP2004/007841

**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
    - international search (under Rules 12.3 and 23.1(b))
    - publication of the international application (under Rule 12.4)
    - international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

**Description, Pages**

1-9                          as originally filed

**Claims, Numbers**

1-6                          as originally filed

a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3.  The amendments have resulted in the cancellation of:
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	1-6
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-6
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-6
	No:	Claims	

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

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**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

- D1: EP-A-0 471 583 (GRACE W R & CO) 19 February 1992 (1992-02-19)  
D2: K. NAKAMOTO ET AL: "Infrared Spectra of Aqueous Solutions. III. Ethylenediaminetetraacetic Acid, N-Hydroxyethylenthiediaminetriacetic Acid and Diethylenetriaminepentaacetic Acid" J.AM.CHEM.SOC., vol. 85, 1963, pages 309-313, XP002266713

**1. Novelty (Article 33(2) EPC):**

- 1.1 Claimed are  
an aqueous solution comprising a sodium salt of compound (I) (claims 1 and 2);  
a container comprising said solution (claim 3);  
use of said solution (claim 4);  
method for preparing said solution (claims 5 and 6)
- 1.2 D1 can be seen as the closest prior art since alkaline salts of HEDTA and their preparation is disclosed.

The difference between D1 and claim 1 of the present application is  
a) in D1 p. 311-312 (section relating to HEDTA) no counteraction is specifically disclosed  
b) in D1 the specific composition of the HEDTA salts is not disclosed.

Present claim 1 therefore can be considered novel.

- 1.3 Since the solution of claim 1 is novel, dependent claim 2 as well as the use and method claims 4 and 5-6 and the container comprising said solution according to claim 3 can be considered novel as well.

**2. Inventive Step (Article 33(3) PCT):**

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- 2.1 The technical problem is seen in providing an aqueous solution of a HEDTA sodium salt with lower viscosity, which does not precipitate at low temperature, can be handled in containers at high concentrations and has less corrosive properties than the HEDTA salts of the prior art.

The technical problem is solved by the compounds of the claims as shown in Tables I-II in the description.

D2 discloses the synthesis of alkali salts of HEDTA.

D1 and D2 do not disclose properties such as viscosity of the HEDTA salts. Neither document discloses a relationship between viscosity and other properties of the salts and the composition of the salt.

The subject-matter of present claim 1 then can be considered inventive over D1 and D2.

- 2.2 Dependent claim 2 as well as the use and method claims 4 and 5-6 as well as the container comprising said solution (claim 3) can be considered inventive as well, since the solution itself is inventive.

**3. Industrial Applicability (Article 33(4) PCT):**

The subject-matter of claims 1-6 is industrially applicable.